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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/538,073	06/09/2005	Takashi Asakura	AKA-0284	8913
23599 7590 04/20/2007 MILLEN, WHITE, ZELANO & BRANIGAN, P.C. 2200 CLARENDON BLVD. SUITE 1400 ARLINGTON, VA 22201			EXAMINER SOROUSH, ALI	
			ART UNIT 1616	PAPER NUMBER
SHORTENED STATUTORY PERIOD OF RESPONSE		MAIL DATE	DELIVERY MODE	
3 MONTHS		04/20/2007	PAPER	

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

## Office Action Summary

**Application No.**

10/538,073

**Applicant(s)**

ASAKURA, TAKASHI

**Examiner**

Ali Soroush

**Art Unit**

1616

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 07 March 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 15-28 is/are pending in the application.
- 4a) Of the above claim(s) 20-28 is/are withdrawn from consideration.
- 5) ☒ Claim(s) 16 and 17 is/are allowed.
- 6) ☒ Claim(s) 15, 18 and 19 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                  | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Acknowledgement of Receipt***

Applicant's response received on 03/07/2007 to Office Action mailed on 02/07/2007 is acknowledged. Applicant's election of Group I (claims 15-19) is acknowledged.

### ***Status of Claims***

Claims 1-14 were cancelled and new claims 15-28 were added in a preliminary amendment received on 06/09/2005. Claims 20-28 are withdrawn from consideration as being drawn to non-elected claims.

### ***Election / Restriction***

Applicant's argument that restriction between Group I-V as set forth is not proper because the invention does not lack unity has been considered. Applicant's argument has been found to not be persuasive because examiner has properly established that the Group I-V lack unity of invention and a search of the Groups would constitute an undue burden. In Office Action mailed on 02/07/2007 examiner has set forth that there is no special technical feature over the prior art as shown by US Patent 5,332,433. Therefore, the restriction requirement is made Final.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Applicant Claims
2. Determining the scope and contents of the prior art.
3. Ascertaining the differences between the prior art and the claims at issue; and resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

1. Claims 15, and 18-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ellis et al. (US Patent 6083490, Published 07/04/2000) in view of Bruno (US Patent 5973175, Published 10/26/1999).

### ***Applicant Claims***

Applicant claims a particulate titanium dioxide of rutile crystalline form having a particle size between 0.5 and 2.0  $\mu\text{m}$  and reflectivity to visible light less than 95%.

### ***Determination of the Scope and Content of the Prior Art (MPEP §2141.01)***

Ellis et al. teaches, "The invention relates to UV absorbing compositions in particular to UV absorbing compositions including surface modified inorganic oxide dispersed in particulate form." (See column 1, Lines 4-7). "The invention will be now described in reference to the use of modified zinc oxide as the UV attenuating oxide, however the invention also extends to other inorganic oxides including titanium dioxide and iron oxide." (See column 1, Lines 11-14). Ellis further teaches that the particles can be used as a dispersion to be "incorporated into a topical preparation for use in skin care, therapeutic treatment, a cosmetic or in hair care." (See claim 11). This can include

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products such as sunscreen. (See claim 14). Ellis et al. also teaches that in order for the dispersion to be invisible on the skin it is preferable that the particle size of the inorganic oxide be of 0.1-1.0  $\mu\text{m}$ . (See column 1, Lines 44-50).

***Ascertainment of the Difference Between Scope the Prior Art and the Claims***  
***(MPEP §2141.012)***

Ellis et al. does not necessarily teach titanium dioxide as the inorganic oxide. However, Ellis et al. does make obvious that zinc oxide can be substituted by titanium oxide. Further Ellis et al. does not teach that the titanium oxide is in a rutile crystalline form. This deficiency is cured by the teachings of Bruno.

Bruno teaches, "Rutile titanium dioxide is opaque to UV light and, therefore, can be a useful ingredient in sunscreen formulation." (See column 3, Lines 54-56).

***Finding of Prima Facie Obviousness Rational and Motivation***  
***(MPEP §2142-2143)***

It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the teachings of Ellis et al. and Bruno. One would have been motivated to do this in order to provide the most appropriate form of titanium oxide to a composition for use as sunscreen. Therefore, one would use a rutile titanium dioxide in order to produce a sunscreen as taught by Ellis et al.

It would have been obvious to one of ordinary skill in the art at the time of the invention to substitute zinc oxide with titanium dioxide in the dispersion taught by Ellis et al. One would have been motivated to do this because Ellis et al. has taught that

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titanium dioxide is equivalent alternative. The instant claims are not structurally distinguishable from the prior art and therefore it is the examiners position that the titanium dioxide particle of Ellis et al. would necessarily possess the characteristics of having a reflectivity to visible light less than 95% and exhibit a transmittance to infrared radiation which is not 0.2 times more than that of rutile dioxide pigment of 0.2 to 0.4 particle size. For the foregoing reasons the instantly claimed particulate titanium oxide is made obvious.

#### ***Allowable Subject Matter***

Claims 16 and 17 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The prior art is free of a teaching a particulate titanium dioxide of a primary particle size between 0.5 and 2.0  $\mu\text{m}$ , which has incorporated into its crystalline lattice aluminum oxide, and zinc oxide. Ellis et al. teaches a titanium oxide that has a particle size between 0.1 – 1.0  $\mu\text{m}$  but does not incorporate aluminum oxide or zinc oxide.

#### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ali Soroush whose telephone number is (571) 272-9925. The examiner can normally be reached on Monday through Thursday 8:30am to 5:00pm E.S.T.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's Supervisor, Johann Richter can be reached on (571) 272-0646. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Ali Soroush  
Patent Examiner  
Art Unit: 1616

  
Johann Richter, Ph.D., Esq.  
Supervisory Patent Examiner  
Technology Center 1600